

REMARKS/ARGUMENTS

Claims 17, 19-47 and 49-57 are under examination in the application. The Office Action mailed on December 17, 2008, includes the following objections and rejections:

1. Claims 17, 23-25, 34-44 and 46-47 are rejected under 35 U.S.C. 102(b).
2. Claims 17, 19-47, 49-52 are rejected under 35 U.S.C. 103(a).
3. Claims 53-57 are rejected under 35 U.S.C. 103(a).

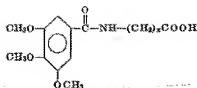
Claims 17, 19-47 and 49-57 were previously provisionally rejected on the ground of nonstatutory obviousness-type double patenting

Applicants filed a Terminal Disclaimer in compliance with 37 CFR 1.321(c) on January 26, 2009 (and was entered into the record) that was entered into the record to overcome the rejection based on a nonstatutory double patenting relating to subject matter said to be claimed in the instant application and Patent Application Number 10/748,432. As such, that rejection was overcome, as stated in the correspondence dated February 11, 2009.

Claims 17, 23-25, 34-44 and 46-47 are rejected under 35 U.S.C. 102(b)

Claims 17, 23-25, 34-44 and 46-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Garzia (US 3,697,563, hereafter referred to as "Garzia"). Applicants assert that Garzia fails to anticipate the present invention.

Garzia discloses a (3,4,5-Trimethoxy-benzamido)-alkanoic acids their pharmaceutically-acceptable salts prophylaxis and treatment of cardiac disorders. A Trimethoxy-benzamido-alkanoic acids is not **identical** to a heptanoic fatty acid. A fatty acid is a carboxylic acid with an unbranched aliphatic tail (chain). They have different characteristics and different properties. Generally, the composition of Garzia has the structure listed below and includes a Trimethoxy-benzamido.



As such, Garzia does not identically disclose every element of the claimed invention. See *Corning Glass Works v. Sumitomo Electric*, 9 USPQ 2d 1962, 1965 (Fed. Cir. 1989). A reference that excludes a claimed element, no matter how insubstantial or obvious, is enough to negate anticipation. *Connell v. Sears, Roebuck & Co.*, 220 USPQ 193, 198 (Fed. Cir. 1983).

In addition, Garzia discloses a group of specific composition and provides a detailed list of the compositions that all include a Trimethoxy-benzamido (see below).

The compounds of the present invention include γ -(3,4,5-trimethoxybenzamido)-butyric acid; δ -(3,4,5-trimethoxybenzamido)-valeric acid; ϵ -(3,4,5-trimethoxybenzamido)-caproic acid; ζ -(3,4,5-trimethoxybenzamido)-heptanoic acid; η -(3,4,5-trimethoxybenzamido)-octanoic acid; θ -(3,4,5-trimethoxybenzamido)-nonanoic acid; and pharmaceutically-acceptable salts thereof. The caproic acid derivative is preferred and will be denoted hereinafter as C-3.

As listed in Garzia the compositions have a benzamido group. Garzia discloses the synthesis of the Trimethoxy-benzamido alkanolic acids through a reaction with the AMINO-alkanoic acids (see below). The synthesis of Garzia fails to disclose a heptanoic fatty acid.

trimethoxybenzoyl chloride and ϵ -amino-caproic acid are available in commercial quantity and the commercial grade materials are suitable for preparing the products of this invention. The corresponding aminovaleric, aminobutyric, aminoheptanoic, aminooctanoic and aminononanoic acids are prepared by known methods by the HCl-catalyzed hydrolysis of the corresponding lactams, which are known in the art.

Again, Garzia fails to disclose a heptanoic fatty acid and does not identically disclose the instant invention as required under 35 U.S.C. 102(b). Garzia may disclose a trimethoxy-benzamido

alkanoic acids or an amino-alkanoic acid; however, these compositions are NOT IDENTICAL to a heptanoic fatty acid and is definitely NOT IDENTICAL to 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate or 3-hydroxy- 5 – methylhexanoate. As such, Garzia does not identically disclose the instant invention. The disclosure by Garzia of completely different compositions like Trimethoxybenzamido alkanolic acids and amino-alkanoic acids cannot anticipate the instant invention.

In addition, Garzia teaches against the use of heptanoic acids as it states in column 2, lines 16-18 that, “[t]he caproic acid derivative is preferred.” Garzia states that the caproic is preferred and provides better results than the other compositions. Further stating that in the Garzia system an even carbon chain molecule is preferred. Clearly, teaching against the heptanoic acids of the instant invention.

Garzia fails to meet the standard of teaching identically the instant invention. As a result, Garzia CANNOT anticipate the instant invention. Applicants respectfully request the withdrawal of the rejection under 35 U.S.C. 102(b).

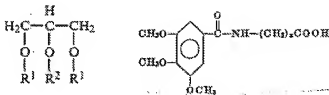
Claims 17, 19-47, 49-52 are rejected under 35 U.S.C. 103(a)

Claims 17, 19-47, 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garzia, in view of Jandacek et al., (US 4,753,963, hereafter referred to as “Jandacek”) and Jones, et al. (British Med. J. 1961, 1276-1278, hereafter referred to as “Jones”).

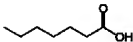
Applicants respectfully submit that claims 17, 19-47, 49-52 are not obvious over the cited art and are, therefore, allowable under 35 U.S.C. § 103(a) for the reasons stated below. In *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007), the Court stated that “a patent composed of several elements is **not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art**. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a **reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way**

the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 1741 (emphasis added). Applicants respectfully submit that claims 17, 19-47, 49-52 are not obvious over the cited art and are, therefore, allowable under 35 U.S.C. § 103(a) for the reasons stated below.

The combination of three references, Garzia AND Jandacek AND Jones, fail to teach **each and every limitation** of the instant invention. Garzia, discussed *supra* and arguments incorporate herein by reference, discloses a trimethoxy-benzamido alkanolic acids and/or an amino-alkanoic acid, which are simply not fatty acids. Jandacek discloses a nutritional fat particularly suitable for enteral and parenteral product; however, the composition disclosed (but not enabled) is a triheptanoin composition. Again, it is not a fatty acid but rather a triglyceride or a triacylglyceride. A triacylglyceride is a glyceride in which the glycerol is esterified with three fatty acids and is the main constituent of vegetable oil and animal fats. It is clear from the structure of the triacylglyceride of Jandacek (below) and the benzamido alkanolic acids of Garzia (below) in combination or individually



are NOT IDENTICAL to a heptanoic fatty acid (below)



and is definitely NOT IDENTICAL to substituted heptanoic fatty acid like 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate or 3-hydroxy- 5 - methylhexanoate (not shown). When the structures are compared it is clearly evident that no combination of the triacylglyceride of Jandacek and the benzamido alkanolic acids of Garzia form the instant invention.

Furthermore, the addition of Jones does not cure these deficiencies. Jones may teach fat mal-absorption in congestive heart failure but the addition of Jones to the triacylglyceride (Jandacek) and a trimethoxy-benzamido alkanolic acids (Garzia) would NOT yield a heptanoic fatty acid and most definitely would NOT yield 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate and 3-hydroxy- 5 – methylhexanoate.

Applicants disagree with the Office Action's statement that the skilled artisan would be motivated to combine the triacylglyceride of Jandacek and the trimethoxy-benzamido alkanolic acids of Garzia. Applicants submit that the suggested combination would still NOT yield a heptanoic fatty acid of the instant invention. The Action states:

One of ordinary skill in the art would have been motivated to substitute the compound formulation with $\xi(3,4,5\text{-trimethoxybenzamido})$ -heptanoic acid in Garzia to the formulation of Jandacek (see supra) and employ in the treatment of cardiac disorders because the Jones reference teaches that fat malabsorption is found in patients with cardiac disorders and thus any cardiac disorder results in cardiac muscle weakness. One of ordinary skill in the art would have expected success in employing the formulation of Jandacek to treat cardiac disorders. With regards to the doses as

The Office Action makes the argument that the combination would yield a triacylglyceride having three trimethoxy-benzamido heptanoic acids; however, that composition is not a heptanoic fatty acid and most definitely not a 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate and 3-hydroxy- 5 – methylhexanoate. Such a tri-(trimethoxy-benzamido heptanoic acid) triacylglyceride compound would have different characteristics, physical properties and chemical characteristics. As a result, the combination fails to teach **each and every limitation** of the instant invention.

In addition, there is nothing in the combination that provides an expectation of success since there is NOTHING in the references that even remotely suggest that a triglyceride could be

made with three trimethoxy-benzamido heptanoic acids. There is no indication in the references if the combination could be formed given the trimethoxy-benzo groups. It is unclear if such a combination would be possible or if the groups would be sterically hindered by the trimethoxy-benzamido group. There is nothing in the references to even identify if such a combination would even be chemically possible.

Also, it is not clear to the skilled artisan which OH would be reacted to form the attachment to the triacylglyceride, the COOH or one of the methoxys of the trimethoxy-benzamido.

Furthermore, the Examiner has place NOTHING on the record to show that a tri-(trimethoxy-benzamido heptanoic acid) triacylglyceride compound can even be degraded by metabolic enzymes to provide a source of energy in the metabolic pathways of a human.

The Examiner is asked to point to anything in the references that suggest the desired combination and provide any expectation of success of synthesizing such compound and that such a compound would be capable of being metabolized.

The combination of Garzia and Jandacek and Jones fails to teach all the claim limitations, fails to suggest to combine reference as proposed, and fails to provide a reasonable expectation of success. Accordingly, claims 17, 19-47, 49-52 are not anticipated by, or rendered obvious from their combination. Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. § 103.

Jones should not be considered prior art.

Applicants reassert the fact that Jones is not prior art and should not even be combined with Garzia and Jandacek since Jones teaches away from the instant invention. Jones teaches that fat mal-absorption in congestive heart failure leads to steatorrhea, which is a condition characterized by an increase in fat content in stool, i.e., the fat is **not** metabolized. After reading Jones, why would the skilled artisan conclude that giving a subject suffering from steatorrhea (from congestive heart failure) a diet high in fats, fatty acids, trimethoxy-benzamido heptanoic

acid or triacylglyceride since the steatorrhoea would not allow the compounds to be metabolized and the unmetabolized compounds would end up in the stool. As such Jones teaches against the instant invention and should not be considered prior art.

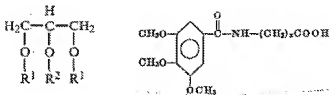
Claims 53-57 are rejected under 35 U.S.C. 103(a)

Claims 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garzia in view of Jandacek, and Jones and further in view of Niezen-Koning J. Inher. Metab. Dis 18, 1995,230-232, hereafter referred to as "Niezen-Koning" and Bach et al. Am. J. Clin. Nutri. 1982; 950-962, hereafter referred to as "Bach".

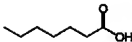
Applicants respectfully submit that claims 53-57 are not obvious over the combination of the 5 cited references and are, therefore, allowable under 35 U.S.C. § 103(a) for the reasons stated below. In *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007), the Court stated that "a patent composed of several elements **is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.** Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify **a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.** This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *Id.* at 1741 (emphasis added). Applicants respectfully submit that claims 17, 19-47, 49-52 are not obvious over the combination of the 5 cited art references (Garzia AND Jandacek AND Jones AND Niezen-Koning AND Bach) and are, therefore, allowable under 35 U.S.C. § 103(a) for the reasons stated below.

First, the combination fails to teach **each and every limitation** of the instant invention. Garzia, discussed *supra* and arguments incorporate herein by reference, discloses a trimethoxy-benzamido alkanolic acids and/or an amino-alkanoic acid, which is not a fatty acid. Jandacek discloses a nutritional fat particularly suitable for enteral and parenteral product; however, the

composition disclosed (but not enabled) is a triheptanoin composition. Again, it is not a fatty acid but rather a triglyceride or a triacylglyceride. A triacylglyceride is a glyceride in which the glycerol is esterified with three fatty acids and is the main constituent of vegetable oil and animal fats. It is clear from the structure of the triacylglyceride of Jandacek (below) and the -benzamido alkanolic acids (below):



are NOT IDENTICAL to a heptanoic fatty acid (below) and is definitely NOT IDENTICAL to substituted heptanoic fatty acid like 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate or 3-hydroxy- 5 - methylhexanoate (not shown).



One can also see that the combination of a triacylglyceride (Jandacek) and a trimethoxy-benzamido alkanolic acids (Garzia) would NOT yield a heptanoic fatty acid. The addition of Jones, Niezen-Koning and Bach do not cure these deficiencies. Jones teaches fat mal-absorption in congestive heart failure. Niezen-Koning's disclosure of disorders that affect the transport of long-chain fatty acids. Bach discloses even chain fatty acids. The suggested additions to the combination of a triacylglyceride (Jandacek) and trimethoxy-benzamido alkanolic acids (Garzia) would NOT yield a heptanoic fatty acid.

The combination of Jandacek AND Garzia AND Jones AND Niezen-Koning AND Bach do not disclose a heptanoic fatty acid to provide relief to said patient from said cardiac disorder selected from cardiac muscle weakness or cardiac myopathy and the combination is definitely NOT IDENTICAL to a substituted heptanoic fatty acid like 4-methylhexanoate, 4-methylhexenoate, 3-hydroxy-4-methylhexanoate; 5-methylhexanoate, 5-methylhexenoate or 3-

hydroxy- 5 – methylhexanoate to provide relief to said patient from said cardiac disorder selected from cardiac muscle weakness or cardiac myopathy. As a result, the combination of Jandacek AND Garzia AND Jones AND Niezen-Koning AND Bach fails to teach each and every limitation of the instant invention.

In addition, there is nothing in the combination of Jandacek AND Garzia AND Jones AND Niezen-Koning AND Bach that provides an expectation of success. The suggested trimethoxy-benzamido heptanoic acid is not presented in any of the references and there is NOTHING in the references that even remotely suggest that a triglyceride could be made with three trimethoxy-benzamido heptanoic acids. There is no indication in the references if the combination would be sterically hindered by the trimethoxy-benzamido group. There is nothing in the references to even identify if such a combination would even be chemically possible. It is not even clear to the skilled artisan, which OH would be reacted to form the attachment to the triacylglyceride, the COOH or one of the methoxys of the trimethoxy-benzamido. Furthermore, there is nothing in the references that even suggest if such a compound could be broken down for energy in the metabolic pathways of a human. There is NOTHING in the references that suggest the combination and NOTHING that suggests such a combination would be successful. The Examiner is asked to point to anything in the references that suggest the desired combination or provide any expectation of success.

The combination of combination of Jandacek AND Garzia AND Jones AND Niezen-Koning AND Bach fails to teach all the claim limitations, fails to suggest combining reference as proposed, and fails to provide a reasonable expectation of success. Accordingly, claims 53-57 are not anticipated by, or rendered obvious from their combination. Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. § 103.

Conclusion

In light of the remarks and arguments presented above, Applicants respectfully submit that the claims in the Application are in condition for allowance. Favorable consideration and allowance of the pending claims 17, 19-47 and 49-57 are therefore respectfully requested.

If the Examiner has any questions or comments, or if further clarification is required, it is requested that the Examiner contact the undersigned at the telephone number listed below.

Dated: March 17, 2009.

Respectfully submitted,



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